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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Dominique Billieres, et al.

Title: CERAMIC ARTICLE HAVING CORROSION-RESISTANT LAYER, SEMICONDUCTOR PROCESSING APPARATUS INCORPORATING SAME, AND METHOD FOR FORMING SAME

App. No.: 10/646,235 Filed: August 22, 2003

Examiner: Jennifer C. McNeil Group Art Unit: 1775

Customer No.: 34456 Confirmation No.: 9381

Atty. Dkt. No.: 1035-E4287

MS AF
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

REQUEST FOR RECONSIDERATION

Dear Sir:

In response to the Final Office Action mailed October 18, 2006, reconsideration of the rejections contained therein is respectfully requested for the following reasons.

Claims 1-5, 7-10, and 41-43 were rejected under §102(e). This rejection is respectfully traversed fro the following reasons.

As described in Applicants' prior response, the claimed invention is drawn to a ceramic article comprising a substrate and a corrosion-resistant coating thereon. This substrate consists essentially of alumina, and the coating comprises at least 80 wt.% of a rare earth oxide, directly contacts the substrate such that the structure is free of intervening layers, and has an adhesion strength not less than 20 MPa.

The PTO's continued reliance upon Yamada et al. is deficient. Foremost, it is not entirely clear why the PTO continues to emphasize the claimed transitional phrase of "consisting

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Debra J. Gillioley
Typed or Printed Name



essentially of," since this transitional phrase is confined to the substrate, and not the corrosion-resistant coating. That is, as stated above, the claimed ceramic article includes a coating that contains at least 80 wt.% of a rare earth oxide. Yamada et al. teach in every example that contains a rare earth oxide (yttria in Yamada et al.), a molar ratio of yttria to alumina (which is not a rare earth oxide) of 3:5, corresponding to a weight ratio of 57.1:42.9 as described in paragraph [00.89] of the reference. There is not a single example contained in Yamada et al. that is relevant to the claimed invention. While Applicants understand and appreciate the statement by the PTO that Yamada et al. make reference to yttria in paragraph [0075], not only does Yamada et al. fail to teach or suggest use of yttria in the context of a ceramic article having high adhesion strength, but fail to even remotely enable such a structure.

In particular, Yamada et al. teach use of a blended yttria:alumina composition to achieve adhesion with the underlying alumina substrate. Use of high alumina content to promote adhesion is admittedly well understood in the art and acknowledged as such by applicants in the present specification. This use of notable substrate material in the overlying layer, is the foundation of graded interlayers to promote adhesion discussed in the present specification. The prior art including Yamada et al. does not teach or remotely enable high rare earth oxide content (at least 80 wt.%) layers having high adhesion strength on alumina substrates. While Example A3 provided in Table 1 has a peel strength of 30 MPa and does not rely on a thermally reacted interlayer, Example A3, like the remaining rare earth containing examples, is not formed of principally (at least 80 wt.%) rare earth oxide. It appears that Example A3 overcomes poor adhesion strength by relying upon a high alumina content, 42.9 wt.%, contrary to the claimed invention.

To briefly summarize, while Yamada et al. do teach the use of a rare earth oxide-containing layer on an alumina substrate to have high adhesion strength, Yamada et al. fail to teach or even remotely suggest a corrosion-resistant coating maintaining such high adhesion formed principally of a rare earth oxide.

For at least the foregoing reasons, Applicants submit that the PTO's reliance upon Yamada et al. continues to be deficient and should be withdrawn. Accordingly, withdrawal of the §102(e) rejection is respectfully requested.

Claims 11-14 were rejected under §103 over Yamada et al. This rejection is deficient for the reasons advanced above and should be withdrawn.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicants' undersigned attorney at the number listed below.

Applicants do not believe that any additional fees are due, but if the Commissioner believes additional fees are due, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

2/20/07
Date


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